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Conference Abstract

Enhancing Taxonomic Skills in West Africa and Supporting the Growth of GC Herbarium (Ghana)

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Abstract

Training the next generation of environmental scientists is critical to the future of life on Earth as acknowledged in 2021 by the Royal Botanic Gardens, Kew (RBG, Kew) in Our Manifesto for Change. RBG, Kew is also committed to strengthening capacity in the most biodiverse tropical countries by sharing expertise and collections, to enhance the global conservation effort. Developing training programmes to enhance taxonomic capacity in Africa and meeting the demand for early career in-country taxonomists was identified as the first step to accelerate the documentation and conservation of African plant diversity.

Two years ago, RBG, Kew, in collaboration with the University of Ghana and the Ghana Herbarium (GC) and with support from the Schroder Charity Trust and Mallinckrodt Foundation, developed a tailored “Plant Taxonomy Skills for Ecology and Conservation” training course. This was planned to run in Africa, South America and Asia, alternating each year. The pilot was organised in Ghana, Africa in 2022. Participants for this 5-week course were selected from over 260 applicants. Delivered in a hybrid format, the course started with 3 weeks of online lectures, pre-recorded by 15 plant scientists and curators at RBG, Kew, as well as online interactive sessions. This was then followed by 2 weeks of in-person training in Ghana, including a 1-day field trip for practical collecting tips. The training covered herbarium curation techniques as well as concepts and skills needed for

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taxonomic revisions such as nomenclature, taxonomy, analysis of herbarium specimens, databasing, geo-referencing, preparation of morphological descriptions, diagnosis and identification keys as well as building distribution maps and red listing. The in-country teaching team included a curator-botanist, a plant taxonomist, a science education coordinator from RBG, Kew and two professors from University of Ghana. The course ended with a written assignment in the form of a taxonomic revision. A short survey was sent out to all course participants two years after the course to gather impacts of the training on their careers and uncover the most positive and negative aspects of the course.

The course provided many positive outcomes: 15 plant taxonomists from eight African countries were trained, and jointly produced a taxonomic revision of 28 species of *Ipomoea* L. (Convolvulaceae) from Ghana (Williams et al. 2024). Additionally, The African Taxonomists Network was initiated by the course participants with a mission of 'Fostering the next generation of taxonomists to bridge the generational gap and revitalize the relevance of taxonomy in Africa for the future.' This network now has over 60 members, meets regularly online, and has a large presence on social media. Furthermore, the course also resulted in the awarding of the International Association for Plant Taxonomy (IAPT) Biodiversity Challenge grant to the GC Herbarium in 2022. This grant enabled acquiring essential plant collecting equipment and herbarium materials, either by sourcing them in Ghana or from abroad. The GC herbarium, founded in 1952, contains ~85,000 collections of plant and algae specimens from Ghana and across West Africa with high historical, teaching and research value. This collection is vital to enhancing in-country taxonomic capacity. Therefore, the improvement and upgrade supported by the grant, as well as its recognition, are essential. Another rewarding impact of the course is strengthening of links between RBG, Kew and African institutions of higher education. These links have quickly developed into a larger partnership and were the first step towards a long-term collaboration. The ultimate objective of this collaboration has been to create the necessary conditions, both in infrastructure and human capacity to deliver the Flora of Ghana. This will be achieved by implementing a project to support the maintenance and growth of the GC herbarium in addition to taxonomic capacity building and teaching.

The participants benefited from the course by engaging with mentors, networking and exchanging ideas, forming links with individuals with similar research interests and obtaining additional training and career progression opportunities. In the feedback survey, all participants reported that this course made them consider a career or future studies in plant taxonomy and 80% of the participants reported securing a new job or a student position in plant taxonomy two years after the course. In addition, all participants listed several positive impacts of the course on their career such as confidence in producing a taxonomic revision, gaining herbarium management skills and opportunities for new collaborations. This course has been subsequently successfully run in South America (Bolivia) and Asia (Indonesia), with expectations of similarly positive outcomes, and is already planned to return to Africa (Kenya) in 2025.

Keywords

biodiversity, collections, plant taxonomy, training

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Conflicts of interest

The authors have declared that no competing interests exist.

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